Chapter 12

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1 ADC Compact Plus Glossary

µGy	Micro Gray – x-ray dose 1Gy= 0.87 x 10 –2 J/kg
A / D Converter	**A**nalog **D**igital **C**onverter; the part that translates an analog signal into a digital signal, which can be handled by computers.
ADC	**A**gfa **D**iagnostic **C**enter
Adjustloop	Service Program for mechanical adjustments of the CHM-module step by step cycle of a 3.5x43cm IP + Cassette, to define the correct stepper motor steps controlled by the Service PC
AE – title	**A**pplication **E**ntity
AOS	**A**donis **O**perating **S**ystem Operating system for Agfa CPU's (Gemini, Goliath, David)
APIP	**A**gfa **P**icture **A**rchiving **P**rotocol
ARIEL	
AUI	**A**ttachment **U**nit **I**nterface (External „Box“ to connect to a network)
AS	**A**rchive **S**tation
BOL	**B**egin **O**f **L**ine; Sensor for exact positioning the scan surface along the x-axis. A PIN diode is hit by the laser beam before it reaches the image plate. The Pin diode creates a digital signal, called begin of line signal. The distance (time) between this signal and the IP must be adjusted.
BOS	**B**egin **O**f **S**can;
Browser	Software that provides an interface to the World Wide Web
BSP	**B**oot **S**upport **P**ackage: boot program for Agfa CPU's
Calibration	Procedure on ADC to make a homogeneous exposure look like one on film. Algorithm to counterbalance irregularities in the scanner of ADC.
CCM	**C**onfiguration and **C**ustomization **M**anager (Tool to edit the configuration file *adc.cpf*)
CHM	**C**assette **H**andling **M**odule

Collimation	Determination of the region in the image where the interesting data is at. On that region the image processing is applied..
Controller	Is connected ahead the laser recorder. The controller is responsible for the image reception from the diagnostic equipment, the image processing, layout of the images on the film, and image transmission to the machine.
cPCI	**c**ompact **P**eripheral **C**omponent **I**nterconnect – bus system used in ADC Compact Plus
CPF – file	**C**ustomization **P**arameter **F**ile; file that contains settings for all parameters that can be modified to configure an ADC System according to local needs.
CPU	**C**entral **P**rocessing **U**nit.
CR	**C**omputed **R**adiography
CU-Filter	Copper Filter, used for control of image quality
DAC	**D**igital **A**nalog **C**onverte**r**
Decomposition	The original image is being split up in a set of bandpass-filtered images
Diagnostic Logger	Tool on ADC to keep a lot of reduced images with the corresponding image data on the HD.
DICOM	**D**igital **I**maging and **CO**mmunications in **M**edicine;
Diode Laser	
Dose, x-ray dose	= kV x mA x sec see also µGy = Micro Gray
Dosimeter	Device to measure x-ray dose
DR	**D**irect **R**adiography
DRA	**D**irect **R**emote **A**ccess (external product name: AGFATEC LINK)
Dynamic Range	Exposure range in which ADC can get usable image data.
Ethernet	A network standard for the hardware and data link levels.
Fastscan direction	
FOI	**F**iber **O**ptic **I**nterface. Digital interface for the transmission of image and control data via a light-leading fiber.
FSE	**F**ield **S**ervice **E**ngineer

FTP	**F**ile **T**ransfer **P**rotocol. The Internet service that transfers files from one computer to another. (Program used for transmission of files in the Internet)
Grid	to reduce scattered radiation to increase sharpness
GSC	**G**lobal **S**upport **C**enter
GUI	**G**raphical **U**ser **I**nterface
HT power supply	**H**igh **T**ension power supply
HCP	**H**ard **C**opy **P**rinter
HDD	**H**ard **D**isk **D**rive
Heel Effect	inhomogeneous exposure
HeNe Laser	**He**lium **Ne**on Laser
HiRes	High Resolution: pixel size = 100 micrometer
HIS	**H**ospital **I**nformation **S**ystem
Histogram	graphical display of the distribution of gray levels
HUB (Ethernet)	box to interconnect network hosts with Twisted Pair cable. Also called concentrator.
HUB (in AGFA devices)	Switchbox (Hard- or Software) which switches or multiplexes different channels, e.g. AMDI and Service Channel.
I/O BUS	**I**nput / **O**utput **BUS**. System consisting of a defined cable, cable connection, and signal for the parallel transmission of control data. The machine uses a bus system of 8 V level and 26 parallel lines.
ID Station	**ID**ENTIFICATION Station
IMOS	**I**MAGE **MO**NITOR **S**OFTWARE -→ succession for SMA
IMPAX	
Internet	The global computer network, composed of thousands of Wide Area Networks (WANs) and Local Area Networks (LANs), that uses TCP/IP to provide world-wide communication to homes, schools, businesses, and governments. The World Wide Web runs on the Internet.
IP	for ADC: **I**mage **P**late (phosphor plate)
IP	**I**mage **P**rocessing

IP	(Internet Protocol) Internet software that divides data into packets for transmission over the Internet. Computers must run IP to communicate across the Internet. See also TCP.
IP-Address	(Internet Protocol Address) The standard method which identifies an internet connected computer.
I / V Converter	
Java	A general-purpose programming language created by Sun Microsystems. Java can be used to create Java applets. A Java program is downloaded from the Web server and interpreted by a program running on the machine containing the Web browser.
Java applet	A short program written in Java that is attached to a World Wide Web page and executed by the browser machine.
JavaScript	A cross-platform, World Wide Web scripting language developed by Netscape Communications. JavaScript code is inserted directly into the HTML page.
LAN	**L**ocal **A**rea **N**etwork. Network technology, designed to connect computers over short distances. It is possible to connect the LAN with the Internet or to make a configuration into an intranet.
Laser	**L**ight **A**mplification by **S**timulated **E**mission of **R**adiation:
LCD	**L**iquid **C**rystal **D**isplay
LED	**L**ight **E**mitting **D**iode; Semi conductor emitting light
Leeds Phantom	Image Plate to check the technical image quality of the ADC. The Leeds Phantom was developed for Agfa by the University of Leeds.
Low Pass Filtering	Butterworth filter in SAB – board to eliminate frequencies > 250 kHz.
LUT	**L**ook **U**p **T**able
MD – Plate	AGFA MD → **M**edium **D**efinition Image Plate
MFA	**M**achine **F**actor **A** Machine specific value indicating the photo multiplier sensitivity MFA is the log of the PM high voltage which results in a scan average level SAL1800 at a given dose of 1mR (~20 μGy) and a speed class 200
MFB	**M**achine **F**actor **B**

MI-CSO	**M**edical Imaging – **C**ustomer **S**upport **O**perations; Agfa department in charge of world wide service.
MIMOSA	**M**edical **IM**age **O**perating **S**ystem **A**gfa; Agfa's workstation operating software
MODEM	**MO**DULATOR **DEM**ODULATOR – device to connect via telephone line to another computer.
Monitor – level	lowest software level on CPU (like BIOS on DOS systems) stored on EEPROM
mR	**m**illi **R**öntgen, measure for x-ray dose 1 mR corres. 8.7 µGy
MS-Board	**M**ulty **S**upply Board; is part of the Power Unit, detects supply voltage, controls the mechanical periphery of the digitizer and protects the stepper motor boards.
MUSICA	**MU**ltiple **S**cale **I**mage **C**ontrast **A**mplification; Agfa's image processing software
Network location	In a URL, the unique name that identifies an Internet server. A network location has two or more parts, separated by periods, as in my.network.location. Also called host name and Internet address.
Node	Nodes in the I/O bus system = printed circuit board in the I/O bus.
Nullmodem	RS 232 (RS242) cable with crossed Transmit / Receive Line
NVE	**N**ame **v**alue file **e**ditor; editor system for parameter
OLUT	**O**utput **L**ook-**U**p **T**able
OS	**O**perating **S**ystem
Password	A text string that allows a user access to an Internet service, if the service requires it.
Photomultiplier Tube (PMT)	**P**hoto **M**ultiplier **T**ube: opto – electronical sensitive device to convert light (laser emission) in current and with a I / V –Converter into voltage
Pixel	Scanning point on the film or plate. A maximum of 2048 per line may be read by the Photomultiplier.
Polygon	
Preview Monitor	displays the image and the name of the patient. This monitor enables to roughly check whether the exposure was successful.
PRID	**PR**EVIEW and **ID** Station, installed on one PC

PS	**P**rocessing **S**tation
Pyramidal Image	Image file format of images on VIPS
Quantisation	compression of image files
RAM	**R**andom **A**ccess **M**emory volatile main memory of computers
RAM – DISK	virtual harddisk simulated in the CPU main memory Gemini RAM-Disk contains all the machine dependent parameters, e.g. stepper motor steps, info counters
REM Tool	Debugging tool for AOS logfiles
Reset	Machine reset into a defined machine status. Various checking routines are carried out during a reset.
RIS	**R**adiology **I**nformation **S**ystem
ROI	**R**egion **O**f **I**nterest
ROM	**R**ead **O**nly **M**emory
RS232 interface	Serial interface which converts computer internal parallel information into serial bits, and vice versa.
SAL	**S**can **A**verage **L**evel Digitized photo multiplier signal of an average of several hundred scanned lines Range SAL0 – SAL4095 (12bit)
Scan Position Adjustment	
SCP	**S**OFT**C**O**P**Y Tool
SCSI	**S**mall **C**omputer **S**ystems **I**nterface – interface to connect peripherals to computers (e.g. HDD, CD-ROM)
Server	A computer that shares its resources, such as printers and files, with other computers on the network.
Service Host	
Service interface	RS232 standard interface for the connection of the Service PC.
Shading Calibration	position dependent sensitivity calibration; calibration of each pixel in a line
Shell	User Interface of the VME – AOS

Slowscan direction	Transport Direction of Image Plate through the scan unit. The stepper motor speed is calculated such that the distance between two scan lines equals the distance between two pixels in a line.
Speed Class (SC)	Dose=1mR + SC100 => D=1 above fog + base A film-screen-system with speed class 100 which is exposed with a dose of 1mR results in a density 1 above fog+base.
Square Root Compression	Signal ~ $\sqrt{N}$. Method to quantisize Signal in 12 similar block sizes
Standard Res	Standard Resolution: pixel size = 150 micrometer
Subnet number	A part of the internet address which designates a subnet
TCP	**T**ransmission **C**ontrol **P**rotocol. Internet networking software that controls the transmission of packets of data over the Internet. Among its tasks, TCP checks for lost packets, puts the data from multiple packets into the correct order, and requests that missing or damaged packets be resent. Computers must run TCP to communicate with World Wide Web servers.
TCP/IP	**T**ransport **C**ontrol **P**rotocol / **I**nternet **P**rotocol. Common Protocol for Networks. Used in the Internet
Testsheet	Image plate with testpattern, print to check the geometric qualtity of ADC:
Text Field	Part of the film displaying patient, hospital and image processing information
UI	**U**ser **I**nterface; part of a computer program that handles interaction with the user.
UPS	**U**ninterruptible **P**ower **S**upply
URL	**U**niform **R**esource **L**ocator; address code for multimedia documents.
UTP - cable	**U**nshielded **T**wisted **P**air (Network transfer medium) cable. Cable to connect to a computer network.
VIPS	**V**iewing and **I**mage **P**rocessing **S**tation
VME bus	**V**ersa **M**odule **E**urope **bus** Bus system from Motorola (used in ADC Digitizers) Bus for the parallel image data transmission. 16 bit bus.
W/L	**W**indow and **L**eveling of digital images.
X-Rite densitometer	Automatic density measuring instrument manufactured by X-Rite.

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